CHOCF 2,8
11/17/2010

City of Portland
Environment Services
Industrial Stormwater Program

Date: November 17, 2010
Time: 13:30

Event Log

Event Type	
☐ Phone: _____	**Industry Name:** American Recyclers (FKA EMRI and Harbor Oil) 11535 N Force Avenue
☐ Meeting	
☐ Site visit	
☐ Photographs	**RE:** Sampling facility stormwater. Collected two samples: (1) influent entering the treatment system, and (2) effluent discharging from the treatment system to Force Lake. Samples were collected by Reuben Snyder (myself) and Marty Anderson.
X Sampling	
☐ Memorandum	
☐ Other: _____	

LOG:

- We arrived and made arrangements with on-site personnel to collect samples. It was cool and raining.
- We assessed the sampling locations and determined that all samples can be collected by filling directly into the bottles, no transfer of sampled water was required. pH was measured by collecting water into a pre-cleaned stainless steel beaker. We wore nitrile gloves during the sample collection and practiced clean sampling collection methods. Collected samples were stored in coolers with blue ice and after collection taken directly to the Water Pollution Control Lab for release and analysis.
- We collected the influent sample first at 13:51 from the pipe discharging water into the oil and water separator (See photograph and chain-of custody). We collected the effluent sample at 13:56 from the 1200-COLS compliance sampling location (See photograph and chain-of-custody).
- We collected photographs of the sample locations (below) and also the actual discharge into Force Lake (not shown).

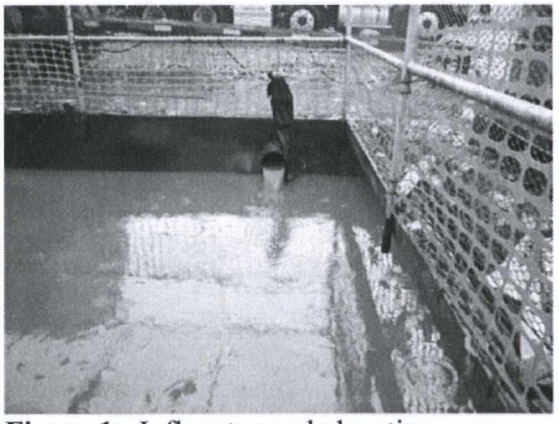

Figure 1: Influent sample location

Figure 2: Effluent sample location

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Columbia Slough Stormwater Monitoring**	Client:	Columbia Slough Watershed
Work Order:	**W10K004**	Project Mgr:	Aaron Wieting

Total Metals

JSCS

Total Mercury by ICPMS

Analyte	Result		MRL	Units	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
01 : W10K004-01									Sampled: 11/17/10 13:56	
Mercury	**0.00691**	.012	0.00200	ug/L	1	B10K119	11/27/10	11/27/10	WPCLSOP M-10.02	
01 Influent : W10K004-02									Sampled: 11/17/10 13:51	
Mercury	**0.00893**	.012	0.00200	ug/L	1	B10K119	11/27/10	11/27/10	WPCLSOP M-10.02	

Total Metals by ICPMS

Analyte	Result		MRL	Units	Dilution	Batch	Prepared	Analyzed	Method	Qualifier
01 : W10K004-01 EFF									Sampled: 11/17/10 13:56	
Antimony	**0.655**	1600	0.100	ug/L	1	B10K028	11/19/10	11/22/10	EPA 200.8	
Arsenic	**3.56**	NV	0.100	ug/L	1	B10K028	11/19/10	11/22/10	EPA 200.8	
Beryllium	ND		0.100	ug/L	1	B10K028	11/19/10	11/22/10	EPA 200.8	
Cadmium	**0.351**	.38	0.100	ug/L	1	B10K028	11/19/10	11/22/10	EPA 200.8	
Chromium	**3.66**	NV	0.400	ug/L	1	B10K028	11/19/10	11/22/10	EPA 200.8	
* Copper	**16.1**	3.6	0.200	ug/L	1	B10K028	11/19/10	11/22/10	EPA 200.8	
* Lead	**6.36**	.54	0.100	ug/L	1	B10K028	11/19/10	11/22/10	EPA 200.8	
Nickel	**6.30**	49	0.200	ug/L	1	B10K028	11/19/10	11/22/10	EPA 200.8	
Selenium	ND		0.500	ug/L	1	B10K028	11/19/10	11/22/10	EPA 200.8	
Silver	**0.112**	.12	0.100	ug/L	1	B10K028	11/19/10	11/22/10	EPA 200.8	
Thallium	ND		0.100	ug/L	1	B10K028	11/19/10	11/22/10	EPA 200.8	
* Zinc	**79.6**	33	0.500	ug/L	1	B10K028	11/19/10	11/22/10	EPA 200.8	
01 Influent : W10K004-02									Sampled: 11/17/10 13:51	
Antimony	**2.08**	1600	0.100	ug/L	1	B10K028	11/19/10	11/22/10	EPA 200.8	
Arsenic	**5.96**	NV	0.100	ug/L	1	B10K028	11/19/10	11/22/10	EPA 200.8	
Beryllium	ND		0.100	ug/L	1	B10K028	11/19/10	11/22/10	EPA 200.8	
* Cadmium	**1.18**	.38	0.100	ug/L	1	B10K028	11/19/10	11/22/10	EPA 200.8	
Chromium	**14.1**	NV	0.400	ug/L	1	B10K028	11/19/10	11/22/10	EPA 200.8	
* Copper	**62.1**	3.6	0.200	ug/L	1	B10K028	11/19/10	11/22/10	EPA 200.8	
* Lead	**7.08**	.54	0.100	ug/L	1	B10K028	11/19/10	11/22/10	EPA 200.8	
Nickel	**4.85**		0.200	ug/L	1	B10K028	11/19/10	11/22/10	EPA 200.8	
Selenium	ND		0.500	ug/L	1	B10K028	11/19/10	11/22/10	EPA 200.8	
Silver	ND		0.100	ug/L	1	B10K028	11/19/10	11/22/10	EPA 200.8	
Thallium	ND		0.100	ug/L	1	B10K028	11/19/10	11/22/10	EPA 200.8	
* Zinc	**104**	3.3	0.500	ug/L	1	B10K028	11/19/10	11/22/10	EPA 200.8	

Reported:01/03/11 08:29

Renee Chauvin, Laboratory Coordinator QA/QC

The results in this report apply only to the samples analyzed. Qualifiers and case narrative comments are essential to interpretation of the analytical results. Report reproductions and/or data summaries without qualifiers and comments are incomplete.

City of Portland
Water Pollution Control Laboratory
6543 N. Burlington Ave. / Portland OR 97203 (503) 823-5600 fax (503) 823-5656

Project:	**Columbia Slough Stormwater Monitoring**	Client:	Columbia Slough Watershed
Work Order:	**W10K004**	Project Mgr:	Aaron Wieting

Total Metals - Quality Control Report

Analyte	Result	MRL	Units	Spike Level	Source Result	%Rec (Limits)	RPD (Limit)	Prepared: Analyzed	Qualifier
Total Metals by ICPMS - Batch B10K028									
Blank (B10K028-BLK1)									
Selenium	ND	0.500	ug/L					11/19/10 :11/23/10	
Silver	ND	0.100	ug/L					11/19/10 :11/23/10	
Thallium	ND	0.100	ug/L					11/19/10 :11/23/10	
Zinc	ND	0.500	ug/L					11/19/10 :11/23/10	
LCS (B10K028-BS1)									
Antimony	**10.22**	0.100	ug/L	10.0		102 *(85-115)*		11/19/10 :11/22/10	
Arsenic	**10.21**	0.045	ug/L	10.0		102 *(85-115)*		11/19/10 :11/22/10	
Beryllium	**10.23**	0.100	ug/L	10.0		102 *(85-115)*		11/19/10 :11/22/10	
Cadmium	**10.30**	0.100	ug/L	10.0		103 *(85-115)*		11/19/10 :11/22/10	
Chromium	**10.17**	0.400	ug/L	10.0		102 *(85-115)*		11/19/10 :11/22/10	
Copper	**10.55**	0.200	ug/L	10.0		105 *(85-115)*		11/19/10 :11/22/10	
Lead	**10.40**	0.100	ug/L	10.0		104 *(85-115)*		11/19/10 :11/22/10	
Nickel	**10.10**	0.200	ug/L	10.0		101 *(85-115)*		11/19/10 :11/22/10	
Selenium	**51.33**	0.500	ug/L	50.0		103 *(85-115)*		11/19/10 :11/22/10	
Silver	**9.726**	0.100	ug/L	10.0		97 *(85-115)*		11/19/10 :11/22/10	
Thallium	**10.09**	0.100	ug/L	10.0		101 *(85-115)*		11/19/10 :11/22/10	
Zinc	**50.82**	0.500	ug/L	50.0		102 *(85-115)*		11/19/10 :11/22/10	
Duplicate (B10K028-DUP1)		**Source: W10K014-02**							
Antimony	**0.1088**	0.100	ug/L		0.1082		0.6 *(20)*	11/19/10 :11/22/10	
Arsenic	**0.1319**	0.045	ug/L		0.1421		7 *(20)*	11/19/10 :11/22/10	
Beryllium	ND	0.100	ug/L		ND		*(20)*	11/19/10 :11/22/10	
Cadmium	ND	0.100	ug/L		ND		*(20)*	11/19/10 :11/22/10	
Chromium	**0.4989**	0.400	ug/L		0.5048		1 *(20)*	11/19/10 :11/22/10	
Copper	**2.760**	0.200	ug/L		2.795		1 *(20)*	11/19/10 :11/22/10	
Lead	**2.466**	0.100	ug/L		2.510		2 *(20)*	11/19/10 :11/22/10	
Nickel	**0.5541**	0.200	ug/L		0.5567		0.5 *(20)*	11/19/10 :11/22/10	
Selenium	ND	0.500	ug/L		ND		*(20)*	11/19/10 :11/22/10	
Silver	ND	0.100	ug/L		ND		*(20)*	11/19/10 :11/22/10	
Thallium	ND	0.100	ug/L		ND		*(20)*	11/19/10 :11/22/10	
Zinc	**15.22**	0.500	ug/L		15.21		0.07 *(20)*	11/19/10 :11/22/10	
Matrix Spike (B10K028-MS1)		**Source: W10K014-02**							
Antimony	**10.09**	0.100	ug/L	10.0	0.1082	100 *(70-130)*		11/19/10 :11/22/10	
Arsenic	**10.34**	0.045	ug/L	10.0	0.1421	102 *(70-130)*		11/19/10 :11/22/10	
Beryllium	**10.08**	0.100	ug/L	10.0	ND	101 *(70-130)*		11/19/10 :11/22/10	
Cadmium	**10.03**	0.100	ug/L	10.0	ND	100 *(70-130)*		11/19/10 :11/22/10	

Reported:01/03/11 08:29

Renee Chauvin, Laboratory Coordinator QA/QC

The results in this report apply only to the samples analyzed. Qualifiers and case narrative comments are essential to interpretation of the analytical results. Report reproductions and/or data summaries without qualifiers and comments are incomplete.

Columbia Analytical Services™ 1317 S. 13th Avenue, Kelso, WA 98626 | 360.577.7222 | 360.636.1068 (fax) | www.caslab.com

December 10, 2010 Analytical Report for Service Request No: K1013068

Jennifer Shackelford
Portland, City of
6543 N. Burlington Ave
Portland, OR 97203

RE: Columbia Slough Stormwater/W10K004

Dear Jennifer:

Enclosed are the results of the samples submitted to our laboratory on November 19, 2010. For your reference, these analyses have been assigned our service request number K1013068.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3364. You may also contact me via Email at HHolmes@caslab.com.

Respectfully submitted,

Columbia Analytical Services, Inc.

Howard Holmes
Project Chemist

HH/dlm

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value that was detected outside the quantitation range.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.1 definition*: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value that was detected outside the quantitation range.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.1 definition*: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value that was detected outside the quantitation range.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.1 definition*: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

Columbia Analytical Services, Inc.
Kelso, WA
State Certifications, Accreditations, and Licenses

Program	Number
Alaska DEC UST	UST-040
Arizona DHS	AZ0339
Arkansas - DEQ	88-0637
California DHS	2286
Florida DOH	E87412
Hawaii DOH	-
Idaho DHW	-
Indiana DOH	C-WA-01
Louisiana DEQ	3016
Louisiana DHH	LA050010
Maine DHS	WA0035
Michigan DEQ	9949
Minnesota DOH	053-999-368
Montana DPHHS	CERT0047
Nevada DEP	WA35
New Jersey DEP	WA005
New Mexico ED	-
North Carolina DWQ	605
Oklahoma DEQ	9801
Oregon - DHS	WA200001
South Carolina DHEC	61002
Washington DOE	C1203
Wisconsin DNR	998386840
Wyoming (EPA Region 8)	-

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	City of Portland	**Service Request No.:**	K1013068
Project:	Columbia Slough Stormwater	**Date Received:**	11/19/10
Sample Matrix:	Water		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Laboratory/Duplicate Laboratory Control Sample (LCS/DLCS).

Sample Receipt

Two water samples were received for analysis at Columbia Analytical Services on 11/19/10. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Organochlorine Pesticides by EPA Method 8081A

Matrix Spike Recovery Exceptions:
Insufficient sample volume was received to perform a Matrix Spike/Matrix Spike Duplicate (MS/MSD). A Laboratory Control Sample/Duplicate Laboratory Control Sample (LCS/DLCS) was analyzed and reported in lieu of the MS/MSD for these samples.

Elevated Detection Limits:
The detection limit was elevated for all analytes in all samples. The chromatogram indicated the presence of non-target background components. The samples were diluted in order to achieve optimal resolution of the target analytes and internal standard. The results were flagged to indicate the matrix interference.

The detection limit was further elevated for a few analytes in all samples. The chromatogram indicated the presence of non-target background components. The matrix interference prevented adequate resolution of the target compounds at the normal limit. The results were flagged to indicate the matrix interference.

Sample Confirmation Notes:
The confirmation comparison criteria of 40% difference for a few analytes was exceeded in sample W10K004-01. The lower of the two values was reported because there was an apparent interference on the alternate column that produced the higher value.

No other anomalies associated with the analysis of these samples were observed.

Approved by _____ **Date** 12-13-10

SUBCONTRACT ORDER

City of Portland Water Pollution Control Lab

W10K004

K1013068

SENDING LABORATORY:

City of Portland Water Pollution Control Lab
6543 N. Burlington Ave
Portland, OR 97203
Phone: 503-823-5600
Fax: 503-823-5656
Invoice To: Charles Lytle

RECEIVING LABORATORY:

Columbia Analytical Services
1317 S. 13th Avenue
Kelso, WA 98626
Phone :(360) 577-7222
Fax: (360) 636-1068
Project Manager:

WPCL Project Name
Columbia Slough Stormwater

TURNAROUND REQUEST

[X] Standard

[ ] Rush n day(s)

Analysis	Due	Expires	Laboratory ID	Comments
Sample ID: W10K004-01	**Water**	**Sampled:11/17/10 13:56**		
Out-Pesticides Chlor LL (CAS)	12/03/10 17:00	11/24/10 13:56		
Containers Supplied:				
G amber 1L (A)				
Sample ID: W10K004-02	**Water**	**Sampled:11/17/10 13:51**		
Out-Pesticides Chlor LL (CAS)	12/03/10 17:00	11/24/10 13:51		
Containers Supplied:				
G amber 1L (A)				

Released By	Date	Received By	Date
		Dwight	11-19-10 10:46
Dwight CAS	11-19-10 12:15	Dwight CAS	11-19-10 12:16
Released By	Date	Received By	Date

Columbia Analytical Services, Inc. PC_____
Cooler Receipt and Preservation Form

Client / Project: City of Portland Service Request *K10*

Received: 11-19-10 Opened: 11-19-10 By: DW

1. Samples were received via? *Mail* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other*_____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where?_____

If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Cooler Temp °C	Temp Blank °C	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed

7. Packing material used. *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Sleeves* *Other*_____
8. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
9. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
10. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
11. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
12. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
13. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
14. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
15. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

*Notes, Discrepancies, & Resolutions:*_____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Portland, City of	**Service Request:**	K1013068
Project:	Columbia Slough Stormwater/W10K004	**Date Collected:**	11/17/2010
Sample Matrix:	Water	**Date Received:**	11/19/2010

Organochlorine Pesticides

Sample Name:	W10K004-01	**Units:**	ng/L
Lab Code:	K1013068-001	**Basis:**	NA
Extraction Method:	EPA 3535A	**Level:**	Low
Analysis Method:	8081A		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
alpha-BHC	ND	U	2.5	1.1	5	11/24/10	12/03/10	KWG1013071	
beta-BHC	ND	U	2.5	2.1	5	11/24/10	12/03/10	KWG1013071	
gamma-BHC (Lindane)	ND	U	2.5	2.4	5	11/24/10	12/03/10	KWG1013071	
delta-BHC	ND	Ui	3.1	3.1	5	11/24/10	12/03/10	KWG1013071	
Heptachlor	ND	U	2.5	0.90	5	11/24/10	12/03/10	KWG1013071	
Aldrin	ND	Ui	3.9	3.9	5	11/24/10	12/03/10	KWG1013071	
Heptachlor Epoxide	ND	U	2.5	1.1	5	11/24/10	12/03/10	KWG1013071	
gamma-Chlordane†	ND	U	2.5	1.6	5	11/24/10	12/03/10	KWG1013071	
Endosulfan I	ND	U	2.5	1.3	5	11/24/10	12/03/10	KWG1013071	
alpha-Chlordane	ND	U	2.5	1.4	5	11/24/10	12/03/10	KWG1013071	
Dieldrin	ND	Ui	2.6	2.6	5	11/24/10	12/03/10	KWG1013071	
4,4'-DDE	4.5	D	2.5	0.95	5	11/24/10	12/03/10	KWG1013071	
Endrin	ND	U	2.5	2.5	5	11/24/10	12/03/10	KWG1013071	
Endosulfan II	ND	Ui	2.5	2.5	5	11/24/10	12/03/10	KWG1013071	
4,4'-DDD	16	PD	2.5	1.1	5	11/24/10	12/03/10	KWG1013071	
Endrin Aldehyde	ND	U	2.5	1.1	5	11/24/10	12/03/10	KWG1013071	
Endosulfan Sulfate	5.7	PD	2.5	1.4	5	11/24/10	12/03/10	KWG1013071	
4,4'-DDT	10	PD	2.5	0.85	5	11/24/10	12/03/10	KWG1013071	
Endrin Ketone	ND	U	2.5	1.6	5	11/24/10	12/03/10	KWG1013071	
Methoxychlor	ND	U	2.5	2.2	5	11/24/10	12/03/10	KWG1013071	
Toxaphene	ND	Ui	360	360	5	11/24/10	12/03/10	KWG1013071	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	76	20-102	12/03/10	Acceptable
Decachlorobiphenyl	78	35-128	12/03/10	Acceptable

† **Analyte Comments**

gamma-Chlordane	For this analyte (CAS Registry No. 5103-74-2), USEPA has corrected the name to be beta-Chlordane, also known as trans-Chlordane.

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Portland, City of	**Service Request:**	K1013068
Project:	Columbia Slough Stormwater/W10K004	**Date Collected:**	11/17/2010
Sample Matrix:	Water	**Date Received:**	11/19/2010

Organochlorine Pesticides

Sample Name:	W10K004-02	**Units:**	ng/L
Lab Code:	K1013068-002	**Basis:**	NA
Extraction Method:	EPA 3535A	**Level:**	Low
Analysis Method:	8081A		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
alpha-BHC	ND	U	2.5	1.1	5	11/24/10	12/03/10	KWG1013071	
beta-BHC	ND	U	2.5	2.1	5	11/24/10	12/03/10	KWG1013071	
gamma-BHC (Lindane)	ND	U	2.5	2.4	5	11/24/10	12/03/10	KWG1013071	
delta-BHC	ND	Ui	2.9	2.9	5	11/24/10	12/03/10	KWG1013071	
Heptachlor	ND	Ui	2.5	2.5	5	11/24/10	12/03/10	KWG1013071	
Aldrin	**5.5**	D	2.5	1.7	5	11/24/10	12/03/10	KWG1013071	
Heptachlor Epoxide	ND	U	2.5	1.1	5	11/24/10	12/03/10	KWG1013071	
gamma-Chlordane†	ND	U	2.5	1.6	5	11/24/10	12/03/10	KWG1013071	
Endosulfan I	ND	U	2.5	1.3	5	11/24/10	12/03/10	KWG1013071	
alpha-Chlordane	ND	U	2.5	1.4	5	11/24/10	12/03/10	KWG1013071	
Dieldrin	ND	U	2.5	1.9	5	11/24/10	12/03/10	KWG1013071	
4,4'-DDE	**1.4**	JD	2.5	0.95	5	11/24/10	12/03/10	KWG1013071	
Endrin	ND	U	2.5	2.5	5	11/24/10	12/03/10	KWG1013071	
Endosulfan II	ND	U	2.5	1.8	5	11/24/10	12/03/10	KWG1013071	
4,4'-DDD	ND	U	2.5	1.1	5	11/24/10	12/03/10	KWG1013071	
Endrin Aldehyde	ND	U	2.5	1.1	5	11/24/10	12/03/10	KWG1013071	
Endosulfan Sulfate	ND	U	2.5	1.4	5	11/24/10	12/03/10	KWG1013071	
4,4'-DDT	ND	U	2.5	0.85	5	11/24/10	12/03/10	KWG1013071	
Endrin Ketone	ND	U	2.5	1.6	5	11/24/10	12/03/10	KWG1013071	
Methoxychlor	ND	U	2.5	2.2	5	11/24/10	12/03/10	KWG1013071	
Toxaphene	ND	Ui	130	95	5	11/24/10	12/03/10	KWG1013071	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	91	20-102	12/03/10	Acceptable
Decachlorobiphenyl	84	35-128	12/03/10	Acceptable

† Analyte Comments

gamma-Chlordane	For this analyte (CAS Registry No. 5103-74-2), USEPA has corrected the name to be beta-Chlordane, also known as trans-Chlordane.

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Portland, City of
Project: Columbia Slough Stormwater/W10K004
Sample Matrix: Water

Service Request: K1013068
Date Collected: NA
Date Received: NA

Organochlorine Pesticides

Sample Name: Method Blank
Lab Code: KWG1013071-5

Extraction Method: EPA 3535A
Analysis Method: 8081A

Units: ng/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
alpha-BHC	ND	U	0.49	0.21	1	11/24/10	12/01/10	KWG1013071	
beta-BHC	ND	U	0.49	0.41	1	11/24/10	12/01/10	KWG1013071	
gamma-BHC (Lindane)	ND	U	0.49	0.47	1	11/24/10	12/01/10	KWG1013071	
delta-BHC	ND	U	0.49	0.14	1	11/24/10	12/01/10	KWG1013071	
Heptachlor	ND	U	0.49	0.18	1	11/24/10	12/01/10	KWG1013071	
Aldrin	ND	U	0.49	0.33	1	11/24/10	12/01/10	KWG1013071	
Heptachlor Epoxide	ND	U	0.49	0.21	1	11/24/10	12/01/10	KWG1013071	
gamma-Chlordane†	ND	U	0.49	0.31	1	11/24/10	12/01/10	KWG1013071	
Endosulfan I	ND	U	0.49	0.25	1	11/24/10	12/01/10	KWG1013071	
alpha-Chlordane	ND	U	0.49	0.27	1	11/24/10	12/01/10	KWG1013071	
Dieldrin	ND	U	0.49	0.37	1	11/24/10	12/01/10	KWG1013071	
4,4'-DDE	ND	U	0.49	0.19	1	11/24/10	12/01/10	KWG1013071	
Endrin	ND	U	0.49	0.49	1	11/24/10	12/01/10	KWG1013071	
Endosulfan II	ND	U	0.49	0.35	1	11/24/10	12/01/10	KWG1013071	
4,4'-DDD	ND	U	0.49	0.21	1	11/24/10	12/01/10	KWG1013071	
Endrin Aldehyde	ND	U	0.49	0.21	1	11/24/10	12/01/10	KWG1013071	
Endosulfan Sulfate	ND	U	0.49	0.28	1	11/24/10	12/01/10	KWG1013071	
4,4'-DDT	ND	U	0.49	0.17	1	11/24/10	12/01/10	KWG1013071	
Endrin Ketone	ND	U	0.49	0.32	1	11/24/10	12/01/10	KWG1013071	
Methoxychlor	ND	U	0.49	0.44	1	11/24/10	12/01/10	KWG1013071	
Toxaphene	ND	U	25	17	1	11/24/10	12/01/10	KWG1013071	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Tetrachloro-m-xylene	47	20-102	12/01/10	Acceptable
Decachlorobiphenyl	56	35-128	12/01/10	Acceptable

† **Analyte Comments**

gamma-Chlordane	For this analyte (CAS Registry No. 5103-74-2), USEPA has corrected the name to be beta-Chlordane, also known as trans-Chlordane.

Comments:

Client: Portland, City of
Project: Columbia Slough Stormwater/W10K004
Sample Matrix: Water

Service Request: K1013068

Surrogate Recovery Summary
Organochlorine Pesticides

Extraction Method: EPA 3535A
Analysis Method: 8081A

Units: PERCENT
Level: Low

Sample Name	Lab Code	Sur1	Sur2
W10K004-01	K1013068-001	76 D	78 D
W10K004-02	K1013068-002	91 D	84 D
Method Blank	KWG1013071-5	47	56
Lab Control Sample	KWG1013071-1	47	58
Duplicate Lab Control Sample	KWG1013071-2	52	62

Surrogate Recovery Control Limits (%)

Sur1 = Tetrachloro-m-xylene	20-102
Sur2 = Decachlorobiphenyl	35-128

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with a pound (#) indicate the control criteria is not applicable.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Portland, City of	**Service Request:**	K1013068
Project:	Columbia Slough Stormwater/W10K004	**Date Extracted:**	11/24/2010
Sample Matrix:	Water	**Date Analyzed:**	12/01/2010

Lab Control Spike/Duplicate Lab Control Spike Summary
Organochlorine Pesticides

Extraction Method:	EPA 3535A	**Units:**	ng/L
Analysis Method:	8081A	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1013071

	Lab Control Sample KWG1013071-1 Lab Control Spike			Duplicate Lab Control Sample KWG1013071-2 Duplicate Lab Control Spike					
Analyte Name	**Result**	**Expected**	**%Rec**	**Result**	**Expected**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
alpha-BHC	5.25	10.0	52	5.60	10.0	56	36-122	6	30
beta-BHC	5.46	10.0	55	5.58	10.0	56	42-125	2	30
gamma-BHC (Lindane)	5.44	10.0	54	5.80	10.0	58	44-117	6	30
delta-BHC	5.81	10.0	58	6.07	10.0	61	48-123	4	30
Heptachlor	5.83	10.0	58	6.31	10.0	63	40-115	8	30
Aldrin	4.56	10.0	46	4.87	10.0	49	10-102	7	30
Heptachlor Epoxide	5.37	10.0	54	5.68	10.0	57	49-109	6	30
gamma-Chlordane	5.19	10.0	52	5.51	10.0	55	47-113	6	30
Endosulfan I	5.08	10.0	51	5.40	10.0	54	35-115	6	30
alpha-Chlordane	5.30	10.0	53	5.58	10.0	56	45-115	5	30
Dieldrin	5.38	10.0	54	5.83	10.0	58	50-115	8	30
4,4'-DDE	5.44	10.0	54	5.79	10.0	58	41-116	6	30
Endrin	5.27	10.0	53	5.60	10.0	56	48-126	6	30
Endosulfan II	4.73	10.0	47	4.91	10.0	49	28-128	4	30
4,4'-DDD	5.96	10.0	60	6.19	10.0	62	33-132	4	30
Endrin Aldehyde	4.15	10.0	42	4.31	10.0	43	27-104	4	30
Endosulfan Sulfate	4.97	10.0	50	5.15	10.0	52	38-118	4	30
4,4'-DDT	5.25	10.0	53	5.68	10.0	57	42-143	8	30
Endrin Ketone	5.48	10.0	55	5.61	10.0	56	30-124	2	30
Methoxychlor	5.04	10.0	50	5.35	10.0	54	43-143	6	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

DATA QUALIFIERS

U	-	The analyte was not detected at or above the reported result.
J	-	The analyte was positively identified. The associated numerical result is an estimate.
EXP	-	The result is equal to the number before EXP times 10 to the power of the number after EXP. As an example 3EXP6 equals 3×10^6.
REJ	-	The data are unusable for all purposes.
N	-	There is evidence the analyte is present in this sample.
NJ	-	There is evidence that the analyte is present. The associated numerical result is an estimate.
UJ	-	The analyte was not detected at or above the reported estimated result. The associated numerical value is an estimate of the quantitation limit of the analyte in this sample.
NAF	-	Not analyzed for.
NAR	-	No analytical result.
*	-	The analyte was present in the sample. (Visual aid to locate detected compounds on the report sheet.

Pace Analytical Services, Inc.
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Fax: 612- 607-6444

Pace Analytical™

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID PTK0717-01 (W10K004-1)
Lab Sample ID 10143922001
Filename P101215B_11

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
145		---	---	ND	---	0.498
146		---	---	ND	---	0.498
147	147/149	35.630	1.27	2.30	---	0.996
148		---	---	ND	---	0.498
149	147/149	35.630	1.27	(2.30)	---	0.996
150		---	---	ND	---	0.498
151	135/151	34.675	1.24	(1.12)	---	0.996
152		---	---	ND	---	0.498
153	153/168	38.733	1.25	1.94	---	0.996
154		---	---	ND	---	0.498
155		---	---	ND	---	0.498
156	156/157	---	---	ND	---	0.996
157	156/157	---	---	ND	---	0.996
158		---	---	ND	---	0.498
159		---	---	ND	---	0.498
160		---	---	ND	---	0.498
161		---	---	ND	---	0.498
162		---	---	ND	---	0.498
163	129/138/163	39.973	1.24	(2.54)	---	1.49
164		---	---	ND	---	0.498
165		---	---	ND	---	0.498
166	128/166	---	---	ND	---	0.996
167		---	---	ND	---	0.498
168	153/168	38.733	1.25	(1.94)	---	0.996
169		---	---	ND	---	0.498
170		46.798	1.05	0.987	---	0.498
171	171/173	---	---	ND	---	0.996
172		---	---	ND	---	0.498
173	171/173	---	---	ND	---	0.996
174		42.187	1.06	1.17	---	0.498
175		---	---	ND	---	0.498
176		---	---	ND	---	0.498
177		42.623	1.01	0.687	---	0.498
178		---	---	ND	---	0.498
179		37.659	1.11	0.530	---	0.498
180	180/193	45.541	1.04	2.28	---	0.996
181		---	---	ND	---	0.498
182		---	---	ND	---	0.498
183	183/185	---	---	ND	---	0.996
184		---	---	ND	---	0.498
185	183/185	---	---	ND	---	0.996
186		---	---	ND	---	0.498
187		41.348	1.04	1.37	---	0.498
188		---	---	ND	---	0.498
189		---	---	ND	---	0.498
190		---	---	ND	---	0.498
191		---	---	ND	---	0.498
192		---	---	ND	---	0.498

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
A = Limit of Detection based on signal to noise
B = Less than 10 times higher than method blank level
R = Recovery outside of Method 1668A control limits
Nn = Value obtained from additional analyses

ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion
X = Outside QC Limits
RT = Retention Time
I = Interference
ng's = Nanograms

REPORT OF LABORATORY ANALYSIS

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Tel: 612-607-1700
Fax: 612- 607-6444

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID	PTK0717-01 (W10K004-1)
Lab Sample ID	10143922001
Filename	P101215B_11

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
193	180/193	45.541	1.04	(2.28)	---	0.996
194		---	---	ND	---	0.747
195		---	---	ND	---	0.747
196		---	---	ND	---	0.747
197	197/200	---	---	ND	---	1.49
198	198/199	---	---	ND	---	1.49
199	198/199	---	---	ND	---	1.49
200	197/200	---	---	ND	---	1.49
201		---	---	ND	---	0.747
202		---	---	ND	---	0.747
203		---	---	ND	---	0.747
204		---	---	ND	---	0.747
205		---	---	ND	---	0.747
206		---	---	ND	---	0.747
207		---	---	ND	---	0.747
208		---	---	ND	---	0.747
209		---	---	ND	---	0.747

Conc = Concentration
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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	PTK0717-01 (W10K004-1)
Lab Sample ID	10143922001
Filename	P101215B_11

Congener Group	Concentration ng/L
Total Monochloro Biphenyls	ND
Total Dichloro Biphenyls	ND
Total Trichloro Biphenyls	ND
Total Tetrachloro Biphenyls	0.561
Total Pentachloro Biphenyls	3.22
Total Hexachloro Biphenyls	9.32
Total Heptachloro Biphenyls	7.02
Total Octachloro Biphenyls	ND
Total Nonachloro Biphenyls	ND
Decachloro Biphenyls	ND
Total PCBs	20.1

ND = Not Detected

REPORT OF LABORATORY ANALYSIS

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Method 1668A Polychlorobiphenyl Sample Analysis Results

Client - Test America

Client's Sample ID	PTK0717-02 (W10K004-2)		
Lab Sample ID	10143922002		
Filename	P101215B_10		
Injected By	BAL		
Total Amount Extracted	976 mL	Matrix	Water
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	11/17/2010 13:51
ICAL ID	P101215B04	Received	11/23/2010 10:52
CCal Filename(s)	P101215B_03	Extracted	12/13/2010 15:45
Method Blank ID	BLANK-27245	Analyzed	12/16/2010 03:00

PCB Isomer	IUPAC	RT	Ratio	ng's Added	ng's Found	% Recovery
Labeled Analytes						
13C-2-MoCB	1	7.203	3.05	2.0	1.02	51
13C-4-MoCB	3	10.258	3.16	2.0	1.14	57
13C-2,2'-DiCB	4	10.594	1.64	2.0	0.818	41
13C-4,4'-DiCB	15	18.405	1.63	2.0	1.21	60
13C-2,2',6-TrCB	19	14.835	1.04	2.0	0.959	48
13C-3,4,4'-TrCB	37	26.558	1.05	2.0	1.71	85
13C-2,2',6,6'-TeCB	54	18.745	0.81	2.0	1.40	70
13C-3,4,4',5-TeCB	81	33.785	0.81	2.0	1.52	76
13C-3,3',4,4'-TeCB	77	34.355	0.80	2.0	1.61	81
13C-2,2',4,6,6'-PeCB	104	25.200	1.58	2.0	1.25	62
13C-2,3,3',4,4'-PeCB	105	37.944	1.57	2.0	1.59	80
13C-2,3,4,4',5-PeCB	114	37.290	1.57	2.0	1.58	79
13C-2,3',4,4',5-PeCB	118	36.770	1.60	2.0	1.59	79
13C-2,3',4,4',5'-PeCB	123	36.435	1.55	2.0	1.63	82
13C-3,3',4,4',5-PeCB	126	41.079	1.60	2.0	1.55	78
13C-2,2',4,4',6,6'-HxCB	155	31.388	1.27	2.0	1.29	65
13C-HxCB (156/157)	156/157	44.114	1.29	4.0	3.00	75
13C-2,3',4,4',5,5'-HxCB	167	42.974	1.25	2.0	1.52	76
13C-3,3',4,4',5,5'-HxCB	169	47.384	1.27	2.0	1.39	70
13C-2,2',3,4',5,6,6'-HpCB	188	37.307	1.05	2.0	1.64	82
13C-2,3,3',4,4',5,5'-HpCB	189	49.915	1.05	2.0	1.66	83
13C-2,2',3,3',5,5',6,6'-OcCB	202	42.706	0.89	2.0	1.64	82
13C-2,3,3',4,4',5,5',6-OcCB	205	52.523	0.90	2.0	1.56	78
13C-2,2',3,3',4,4',5,5',6-NoCB	206	54.441	0.80	2.0	1.57	79
13C-2,2',3,3',4,5,5',6,6'-NoCB	208	49.420	0.80	2.0	1.57	78
13C--DeCB	209	56.424	0.69	2.0	1.32	66
Cleanup Standards						
13C-2,4,4'-TrCB	28	22.048	1.09	2.0	1.83	92
13C-2,3,3',5,5'-PeCB	111	34.439	1.58	2.0	1.48	74
13C-2,2',3,3',5,5',6-HpCB	178	40.392	1.03	2.0	1.40	70
Recovery Standards						
13C-2,5-DiCB	9	13.361	1.62	2.0	NA	NA
13C-2,2',5,5'-TeCB	52	24.177	0.80	2.0	NA	NA
13C-2,2',4,5,5'-PeCB	101	31.639	1.63	2.0	NA	NA
13C-2,2',3,4,4',5'-HxCB	138	39.922	1.25	2.0	NA	NA
13C-2,2',3,3',4,4',5,5'-OcCB	194	52.049	0.90	2.0	NA	NA

Conc = Concentration
EML =Method Specified Reporting Limit (1668A)
EMPC = Estimated Maximum Possible Concentration
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R = Recovery outside of Method 1668A control limits
Nn = Value obtained from additional analyses

ND = Not Detected
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REPORT OF LABORATORY ANALYSIS

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID PTK0717-02 (W10K004-2)
Lab Sample ID 10143922002
Filename P101215B_10

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
1		---	---	ND	---	0.256
2		---	---	ND	---	0.256
3		---	---	ND	---	0.256
4		---	---	ND	---	0.256
5		---	---	ND	---	0.256
6		---	---	ND	---	0.256
7		---	---	ND	---	0.256
8		---	---	ND	---	0.256
9		---	---	ND	---	0.256
10		---	---	ND	---	0.256
11		---	---	ND	---	1.54
12	12/13	---	---	ND	---	0.513
13	12/13	---	---	ND	---	0.513
14		---	---	ND	---	0.256
15		---	---	ND	---	0.256
16		---	---	ND	---	0.256
17		---	---	ND	---	0.256
18	18/30	---	---	ND	---	0.513
19		---	---	ND	---	0.256
20	20/28	---	---	ND	---	0.513
21	21/33	---	---	ND	---	0.513
22		---	---	ND	---	0.256
23		---	---	ND	---	0.256
24		---	---	ND	---	0.256
25		---	---	ND	---	0.256
26	26/29	---	---	ND	---	0.513
27		---	---	ND	---	0.256
28	20/28	---	---	ND	---	0.513
29	26/29	---	---	ND	---	0.513
30	18/30	---	---	ND	---	0.513
31		---	---	ND	---	0.256
32		---	---	ND	---	0.256
33	21/33	---	---	ND	---	0.513
34		---	---	ND	---	0.256
35		---	---	ND	---	0.256
36		---	---	ND	---	0.256
37		---	---	ND	---	0.256
38		---	---	ND	---	0.256
39		---	---	ND	---	0.256
40	40/41/71	---	---	ND	---	1.54
41	40/41/71	---	---	ND	---	1.54
42		---	---	ND	---	0.513
43	43/73	---	---	ND	---	1.03
44	44/47/65	---	---	ND	---	1.54
45	45/51	---	---	ND	---	1.03
46		---	---	ND	---	0.513
47	44/47/65	---	---	ND	---	1.54
48		---	---	ND	---	0.513

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Pace Analytical™

Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID PTK0717-02 (W10K004-2)
Lab Sample ID 10143922002
Filename P101215B_10

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
49	49/69	---	---	ND	---	1.03
50	50/53	---	---	ND	---	1.03
51	45/51	---	---	ND	---	1.03
52		---	---	ND	---	0.513
53	50/53	---	---	ND	---	1.03
54		---	---	ND	---	0.513
55		---	---	ND	---	0.513
56		---	---	ND	---	0.513
57		---	---	ND	---	0.513
58		---	---	ND	---	0.513
59	59/62/75	---	---	ND	---	1.54
60		---	---	ND	---	0.513
61	61/70/74/76	---	---	ND	---	2.05
62	59/62/75	---	---	ND	---	1.54
63		---	---	ND	---	0.513
64		---	---	ND	---	0.513
65	44/47/65	---	---	ND	---	1.54
66		---	---	ND	---	0.513
67		---	---	ND	---	0.513
68		---	---	ND	---	0.513
69	49/69	---	---	ND	---	1.03
70	61/70/74/76	---	---	ND	---	2.05
71	40/41/71	---	---	ND	---	1.54
72		---	---	ND	---	0.513
73	43/73	---	---	ND	---	1.03
74	61/70/74/76	---	---	ND	---	2.05
75	59/62/75	---	---	ND	---	1.54
76	61/70/74/76	---	---	ND	---	2.05
77		---	---	ND	---	0.513
78		---	---	ND	---	0.513
79		---	---	ND	---	0.513
80		---	---	ND	---	0.513
81		---	---	ND	---	0.513
82		---	---	ND	---	0.513
83		---	---	ND	---	0.513
84		---	---	ND	---	0.513
85	85/116/117	---	---	ND	---	1.54
86	86/87/97/108/119/125	---	---	ND	---	3.08
87	86/87/97/108/119/125	---	---	ND	---	3.08
88	88/91	---	---	ND	---	1.03
89		---	---	ND	---	0.513
90	90/101/113	---	---	ND	---	1.54
91	88/91	---	---	ND	---	1.03
92		---	---	ND	---	0.513
93	93/98/100/102	---	---	ND	---	2.05
94		---	---	ND	---	0.513
95		---	---	ND	---	0.513
96		---	---	ND	---	0.513

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Method 1668A Polychlorobiphenyl
Sample Analysis Results

Client Sample ID PTK0717-02 (W10K004-2)
Lab Sample ID 10143922002
Filename P101215B_10

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97	86/87/97/108/119/125	---	---	ND	---	3.08
98	93/98/100/102	---	---	ND	---	2.05
99		---	---	ND	---	0.513
100	93/98/100/102	---	---	ND	---	2.05
101	90/101/113	---	---	ND	---	1.54
102	93/98/100/102	---	---	ND	---	2.05
103		---	---	ND	---	0.513
104		---	---	ND	---	0.513
105		---	---	ND	---	0.513
106		---	---	ND	---	0.513
107	107/124	---	---	ND	---	1.03
108	86/87/97/108/119/125	---	---	ND	---	3.08
109		---	---	ND	---	0.513
110	110/115	---	---	ND	---	1.03
111		---	---	ND	---	0.513
112		---	---	ND	---	0.513
113	90/101/113	---	---	ND	---	1.54
114		---	---	ND	---	0.513
115	110/115	---	---	ND	---	1.03
116	85/116/117	---	---	ND	---	1.54
117	85/116/117	---	---	ND	---	1.54
118		---	---	ND	---	0.513
119	86/87/97/108/119/125	---	---	ND	---	3.08
120		---	---	ND	---	0.513
121		---	---	ND	---	0.513
122		---	---	ND	---	0.513
123		---	---	ND	---	0.513
124	107/124	---	---	ND	---	1.03
125	86/87/97/108/119/125	---	---	ND	---	3.08
126		---	---	ND	---	0.513
127		---	---	ND	---	0.513
128	128/166	---	---	ND	---	1.03
129	129/138/163	---	---	ND	---	1.54
130		---	---	ND	---	0.513
131		---	---	ND	---	0.513
132		---	---	ND	---	0.513
133		---	---	ND	---	0.513
134	134/143	---	---	ND	---	1.03
135	135/151	---	---	ND	---	1.03
136		---	---	ND	---	0.513
137		---	---	ND	---	0.513
138	129/138/163	---	---	ND	---	1.54
139	139/140	---	---	ND	---	1.03
140	139/140	---	---	ND	---	1.03
141		---	---	ND	---	0.513
142		---	---	ND	---	0.513
143	134/143	---	---	ND	---	1.03
144		---	---	ND	---	0.513

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Filename P101215B_10

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145		---	---	ND	---	0.513
146		---	---	ND	---	0.513
147	147/149	---	---	ND	---	1.03
148		---	---	ND	---	0.513
149	147/149	---	---	ND	---	1.03
150		---	---	ND	---	0.513
151	135/151	---	---	ND	---	1.03
152		---	---	ND	---	0.513
153	153/168	---	---	ND	---	1.03
154		---	---	ND	---	0.513
155		---	---	ND	---	0.513
156	156/157	---	---	ND	---	1.03
157	156/157	---	---	ND	---	1.03
158		---	---	ND	---	0.513
159		---	---	ND	---	0.513
160		---	---	ND	---	0.513
161		---	---	ND	---	0.513
162		---	---	ND	---	0.513
163	129/138/163	---	---	ND	---	1.54
164		---	---	ND	---	0.513
165		---	---	ND	---	0.513
166	128/166	---	---	ND	---	1.03
167		---	---	ND	---	0.513
168	153/168	---	---	ND	---	1.03
169		---	---	ND	---	0.513
170		---	---	ND	---	0.513
171	171/173	---	---	ND	---	1.03
172		---	---	ND	---	0.513
173	171/173	---	---	ND	---	1.03
174		---	---	ND	---	0.513
175		---	---	ND	---	0.513
176		---	---	ND	---	0.513
177		---	---	ND	---	0.513
178		---	---	ND	---	0.513
179		---	---	ND	---	0.513
180	180/193	---	---	ND	---	1.03
181		---	---	ND	---	0.513
182		---	---	ND	---	0.513
183	183/185	---	---	ND	---	1.03
184		---	---	ND	---	0.513
185	183/185	---	---	ND	---	1.03
186		---	---	ND	---	0.513
187		---	---	ND	---	0.513
188		---	---	ND	---	0.513
189		---	---	ND	---	0.513
190		---	---	ND	---	0.513
191		---	---	ND	---	0.513
192		---	---	ND	---	0.513

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Lab Sample ID 10143922002
Filename P101215B_10

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
193	180/193	---	---	ND	---	1.03
194		---	---	ND	---	0.769
195		---	---	ND	---	0.769
196		---	---	ND	---	0.769
197	197/200	---	---	ND	---	1.54
198	198/199	---	---	ND	---	1.54
199	198/199	---	---	ND	---	1.54
200	197/200	---	---	ND	---	1.54
201		---	---	ND	---	0.769
202		---	---	ND	---	0.769
203		---	---	ND	---	0.769
204		---	---	ND	---	0.769
205		---	---	ND	---	0.769
206		---	---	ND	---	0.769
207		---	---	ND	---	0.769
208		---	---	ND	---	0.769
209		---	---	ND	---	0.769

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Congener Group	Concentration ng/L
Total Monochloro Biphenyls	ND
Total Dichloro Biphenyls	ND
Total Trichloro Biphenyls	ND
Total Tetrachloro Biphenyls	ND
Total Pentachloro Biphenyls	ND
Total Hexachloro Biphenyls	ND
Total Heptachloro Biphenyls	ND
Total Octachloro Biphenyls	ND
Total Nonachloro Biphenyls	ND
Decachloro Biphenyls	ND
Total PCBs	ND

ND = Not Detected

REPORT OF LABORATORY ANALYSIS